Erratum: Kinetic theory of spin transport in n-type semiconductor quantum wells [J. Appl. Phys. 93, 410 (2003)]

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There are some misprints in the text of our paper [JAP **93**, 410 (2003)]. They are corrected as following.

The Poisson equation (5) in the paper should be

$$\nabla^2_{\mathbf{r}}\Psi(\mathbf{r},t)=e[n(\mathbf{r},t)-n_0(\mathbf{r})]/\varepsilon_0, \tag{5}$$

The screen constant κ in the Eq. (8) should be $\kappa^2=6\pi n_0(\mathbf{r})e^2/(aE_f)$.

There are some misprints in Eqs. (9)-(12), the corrected equations are

$$\left.\frac{\partial f_\sigma(\mathbf{R},\mathbf{k},t)}{\partial t}\right|_c=2\mathrm{Im}[\bar{\varepsilon}_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)\rho_{-\sigma\sigma}(\mathbf{R},\mathbf{k},t)] \tag{9}$$

$$\begin{aligned}\left.\frac{\partial \rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)}{\partial t}\right|_c=&-i[\bar{\varepsilon}_{\sigma\sigma}(\mathbf{R},\mathbf{k},t)-\bar{\varepsilon}_{-\sigma-\sigma}(\mathbf{R},\mathbf{k},t)]\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)\\&-i\bar{\varepsilon}_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)[f_{-\sigma}(\mathbf{R},\mathbf{k},t)-f_\sigma(\mathbf{R},\mathbf{k},t)]\end{aligned} \tag{10}$$

$$\begin{aligned}\left.\frac{\partial f_\sigma(\mathbf{R},\mathbf{k},t)}{\partial t}\right|_s=&\Big\{-2\pi\sum_{\mathbf{q}q_z\lambda}|g_{\mathbf{q}q_z\lambda}|^2\delta(\varepsilon_{\mathbf{k}}-\varepsilon_{\mathbf{k}-\mathbf{q}}-\Omega_{\mathbf{q}q_z\lambda})\Big[N_{\mathbf{q}q_z\lambda}\big(f_\sigma(\mathbf{R},\mathbf{k},t)-f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)\\&+f_\sigma(\mathbf{R},\mathbf{k},t)\big(1-f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)-\mathtt{Re}\big(\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},\mathtt{t})\rho^*_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},\mathtt{t})\big)\Big]\\&-2\pi N_i\sum_{\mathbf{q}}U^2_{\mathbf{q}}\delta(\varepsilon_{\mathbf{k}}-\varepsilon_{\mathbf{k}-\mathbf{q}})\Big[f_\sigma(\mathbf{R},\mathbf{k},t)\big(1-f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)-\mathtt{Re}\big(\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},\mathtt{t})\\&\times\rho^*_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)\Big]-2\pi\sum_{\mathbf{k}'\mathbf{q}\sigma'}V^2_{\mathbf{q}}\delta(\varepsilon_{\mathbf{k}-\mathbf{q}}-\varepsilon_{\mathbf{k}}+\varepsilon_{\mathbf{k}'}-\varepsilon_{\mathbf{k}'-\mathbf{q}})\\&\times\Big[\big(1-f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)f_\sigma(\mathbf{R},\mathbf{k},t)\big(1-f_{\sigma'}(\mathbf{R},\mathbf{k}',t)\big)f_{\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},t)\\&+\frac{1}{2}\mathtt{Re}\big(\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},\mathtt{t})\rho_{-\sigma\sigma}(\mathbf{R},\mathbf{k},\mathtt{t})\big)\big(\mathtt{f}_{\sigma'}(\mathbf{R},\mathbf{k}',\mathtt{t})-\mathtt{f}_{\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},\mathtt{t})\big)\\&+\frac{1}{2}\mathtt{Re}\big(\rho_{\sigma'-\sigma'}(\mathbf{R},\mathbf{k}',\mathtt{t})\rho_{-\sigma'\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},\mathtt{t})\big)\big(\mathtt{f}_\sigma(\mathbf{R},\mathbf{k},\mathtt{t})-\mathtt{f}_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},\mathtt{t})\big)\Big]\Big\}\\&-\Big\{\mathbf{k}\leftrightarrow\mathbf{k}-\mathbf{q},\mathbf{k}'\leftrightarrow\mathbf{k}'-\mathbf{q}\Big\}\end{aligned} \tag{11}$$

and

$$\begin{aligned}&\left.\frac{\partial \rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)}{\partial t}\right|_s\\&=\Big\{-\pi\sum_{\mathbf{q}q_z\lambda}g^2_{\mathbf{q}q_z\lambda}\delta(\varepsilon_{\mathbf{k}}-\varepsilon_{\mathbf{k}-\mathbf{q}}-\Omega_{\mathbf{q}q_z\lambda})\Big[\big(f_\sigma(\mathbf{R},\mathbf{k},t)+f_{-\sigma}(\mathbf{R},\mathbf{k},t)\big)\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)\\&+\big(f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)+f_{-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)-2\big)\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)-2N_{\mathbf{q}q_z\lambda}\big(\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)-\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)\Big]\\&-\pi N_i\sum_{\mathbf{q}\lambda}U^2_{\mathbf{q}}\delta(\varepsilon_{\mathbf{k}}-\varepsilon_{\mathbf{k}-\mathbf{q}})\Big[\big(f_\sigma(\mathbf{R},\mathbf{k},t)+f_{-\sigma}(\mathbf{R},\mathbf{k},t)\big)\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)\\&-\big(2-f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)-f_{-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)\big)\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)\Big]\\&-\pi\sum_{\mathbf{k}'\mathbf{q}\sigma'}V^2_{\mathbf{q}}\pi\delta(\varepsilon_{\mathbf{k}-\mathbf{q}}-\varepsilon_{\mathbf{k}}+\varepsilon_{\mathbf{k}'}-\varepsilon_{\mathbf{k}'-\mathbf{q}})\Big\{\big[f_\sigma(\mathbf{R},\mathbf{k}-\mathbf{q},t)\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)+\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)f_{-\sigma}(\mathbf{R},\mathbf{k},t)\big]\end{aligned}$$

$$
\times\Big[f_{\sigma'}(\mathbf{R},\mathbf{k}',t)-f_{\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},t)\Big]+\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k},t)\Big[\big(1-f_{\sigma'}(\mathbf{R},\mathbf{k}',t)\big)f_{\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},t)
-\rho_{\sigma'-\sigma'}(\mathbf{R},\mathbf{k}',t)\rho_{-\sigma'\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},t)\Big]-\rho_{\sigma-\sigma}(\mathbf{R},\mathbf{k}-\mathbf{q},t)\Big[f_{\sigma'}(\mathbf{R},\mathbf{k}',t)\big(1-f_{\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},t)\big)
-\rho_{\sigma'-\sigma'}(\mathbf{R},\mathbf{k}',t)\rho_{-\sigma'\sigma'}(\mathbf{R},\mathbf{k}'-\mathbf{q},t)\Big]\Big\}\Bigg\}-\Big\{\mathbf{k}\leftrightarrow\mathbf{k}-\mathbf{q},\mathbf{k}'\leftrightarrow\mathbf{k}'-\mathbf{q}\Big\} \qquad (12)
$$

respectively.

The numerical results in the paper are based on the correct formulas.